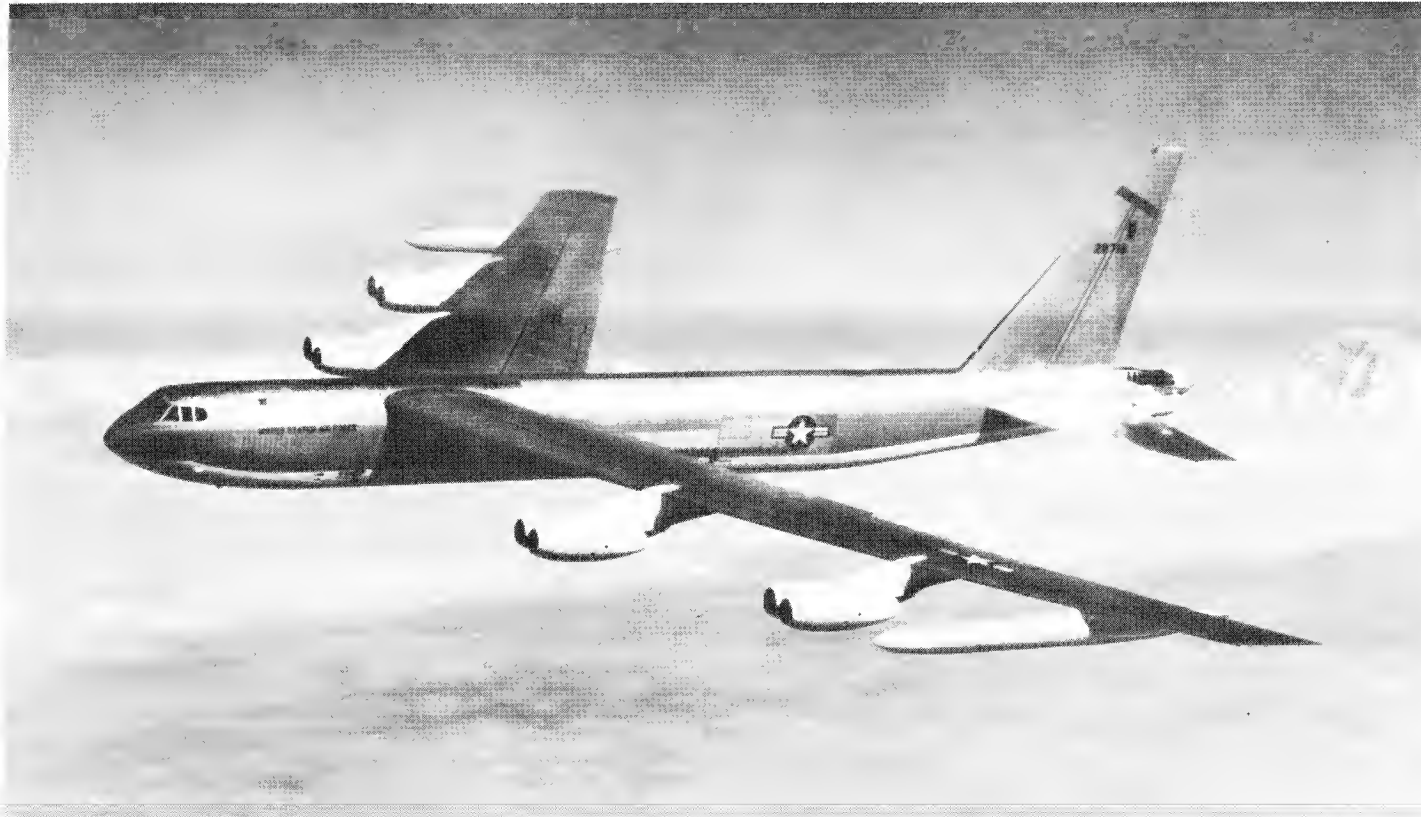


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A1  
B-52E/1602

SERVICE



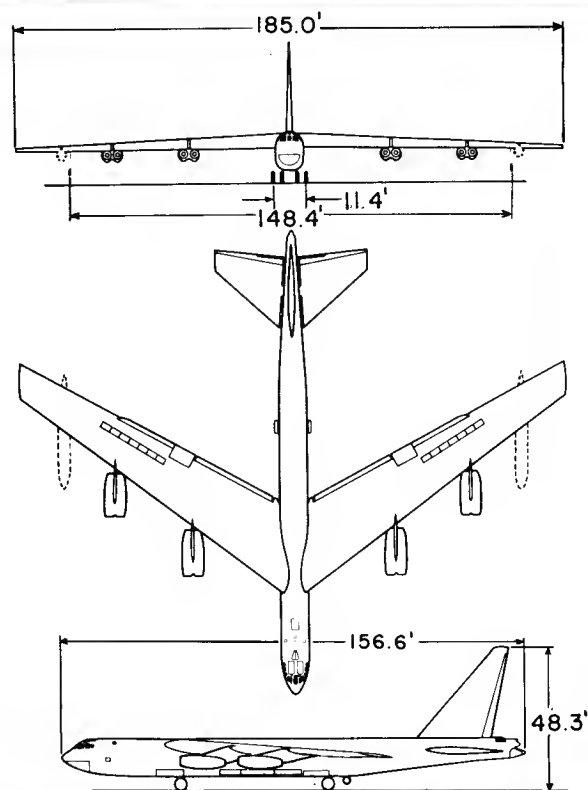
## *Standard Aircraft Characteristics*

BY AUTHORITY OF  
THE SECRETARY  
OF THE AIR FORCE

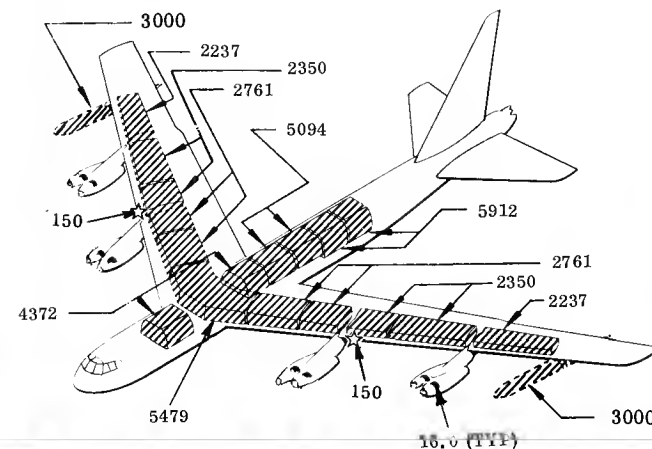
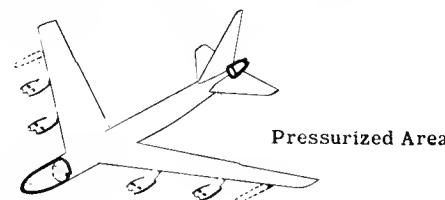
**B-52E**  
**STRATOFORTRESS**  
**Boeing**

EIGHT J57-P-19W, or -29WA

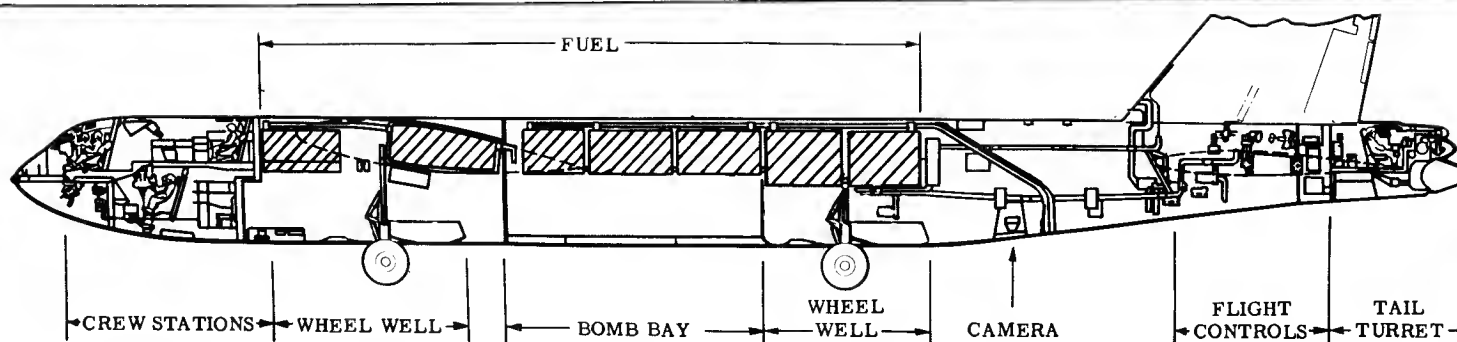
PRATT & WHITNEY



Wing Area . . . . . 4000 sq ft    Wing Section (root) . BAC 233 29.31  
 Aspect Ratio . . . . . 8.55        (tip) .. BAC 236 9.56  
 M.A.C. . . . . . 275.5"



▨ Fuel (Gal)    ☆ Water (Gal)    ■ Oil (Gal)



**POWER PLANT**

Nr & Model . . . . . (8) J57-P-19W  
or -29WA  
Mfr . . . . . Pratt & Whitney  
Engine Spec Nr . . . . . A-1649G  
Type . . . . . Axial  
Length . . . . . 157.7"  
Diameter . . . . . 40.5"  
Weight (dry) . . (J57-P-19W)\*3970 lb  
Tail Pipe . . . . . Fixed Area  
Augmentation . . . . . Water

\*J57-P-29WA engine . . . . 4150 lb

**ENGINE RATINGS**

S. L. Static LB - \*\*RPM - MIN

Max: \*12,100 - 6450/9900 - 5

Mil: 10,500 - 6150/9900 - 30

Nor: 9000 - 5900/9650 -

\*Wet

\*\*First figure represents low  
pressure spool; second figure  
represents high pressure spool.

**DIMENSIONS**

Wing  
Span . . . . . 185.0'  
Dihedral (chord plane) . . 2°30'  
Incidence (root) . . . . . 6°  
Sweepback (LE) . . . . . 36°58'  
Length . . . . . 156.5'  
Height (overall) . . . . . 48.3'  
Height (fin folded) . . . . 21.5'  
Tread (outrigger) . . . . . 148.4'  
Tread (main gear) . . . . . 11.4'

**Mission and Description**

Navy Equivalent: None

Mfr's Model: 464-259

The principal mission of the B-52E aircraft is the destruction of surface objects. The normal crew of six consists of pilot, co-pilot, navigator, bomb navigator, ECM operator and tail gunner.

Automatic cabin pressurization, heating and ventilation are provided for crew comfort during normal and combat operation.

Ejection seats for emergency escape are afforded the crew except for the tail gunner who bails out after jettisoning the tail section containing the gun turret.

Flight control, throughout the speed range from limit dive speed to landing speed is accomplished by use of spoilers and ailerons on the wing; elevators on an all-movable horizontal tail; and a rudder on a fixed vertical tail surface. The spoilers also function as air brakes used in landing.

Air is bled off the engines for thermal anti-icing of the wing and tail surface leading edges.

Other features are single-point ground and air refueling, braking parachute for decreasing landing roll distance, and a cross wind landing gear to aid in crosswind take-off and landing and a liquid oxygen system. The airplane utilizes the A/A42G-11 Auto Flight Control and the N-1 Compass.

The B-52E differs from the B-52D by the installation of the AN/ASQ-38 Bombing Navigational System in place of the AN/ASQ-48.

**Development**

Design Initiated: . . . . . May 53  
First flight . . . . . Nov 57  
First delivery to SAC . . . . . Dec 57

**WEIGHTS**

Loading	Lb	L. F.
Empty . . . . .	174,782 (C)	
Basic . . . . .	178,124 (C)	
Design . . . . .	460,000 . . . . .	2.0
Combat . . . . .	*292,460 . . . . .	2.4
Max T.O. . . . .	**450,000 . . . . .	2.0
Max In-Flt . . . .	450,000 . . . . .	2.0
Max Land . . . . .	***450,000	

(C) Calculated

\* For Basic Mission

\*\* Excludes 2500 lb water

\*\*\* For contact sinking speed of 6 ft/sec

Max taxi wt, 2500 lb water

Limited by structure

**FUEL**

Location	Nr Tanks	Gal
Wg, outbd . . . . .	2 . . . . .	4474
Wg, ctr . . . . .	1 . . . . .	5479
Wg, mains . . . . .	4 . . . . .	10,222
Fus, fwd . . . . .	2 . . . . .	4372
Fus, ctr . . . . .	1 . . . . .	5094
Fus, aft . . . . .	1 . . . . .	5912
Wg, drop . . . . .	2 . . . . .	6000
	Total	41,553
Grade . . . . .		JP-4
Specification . . . . .		MIL-T-5624

**OIL**

Nacelle . . . . .	8 . . . . .	128
Specification . . . . .		MIL-L-007808F
	WATER	
Wg, L.E. . . . .	2 . . . . .	300

**BOMBS**

Nr	Class (lb)
New Series	
27 . . . . .	(Family of Clusters) . . . . 1000
Special Weapons	
MK28 . . . . .	MK53
MK41 . . . . .	MK57

Note: Structural provisions for 50,000 lb bomb; airplane will carry 4 ADM-20 & 2 AGM-28 missiles.

**GUNS**

Nr	Type	Size	Rds ea	Loc
4 . . . . .	M-3 . . . . .	.50 . . . . .	600 . . . . .	Tail, tur

**CAMERAS**

Nr	Type	Lens
1 . . . . .	K-38 . . . . .	36"
1 . . . . .	K-22 . . . . .	6"
	or	
1 . . . . .	K-17D . . . . .	6"
1 . . . . .	O-15 Radar Recording	

**ELECTRONICS**

UHF Command . . . . . (2) AN/ARC-34  
Liaison . . . . . AN/ARC-65X  
IFF . . . . . AN/APX-25  
Radar Beacon . . . . . AN/APN-69  
ECM Trans . . . . . (3) AN/ALT-6B  
ECM Receiver (1) . . . . . AN/APR-9  
Interphone . . . . . AN/AIC-10A  
Bombing Sys . . . . . AN/ASQ-1  
Nav Recv'r . . . . . AN/ARN-14  
Fire Control Sys . . . . . MD-9

See page 6 for additional equipment.

# Loading and Performance—Typical Mission

C O N D I T I O N S			BASIC MISSION I	DESIGN MISSION II	MAX BOMB MISSION III	FERRY RANGE IV
TAKE-OFF WEIGHT	⑦	(lb)	450,000	450,000	450,000	450,000
Fuel at 6.5 lb/gal (grade JP-4)		(lb)	254,770	256,170	221,770	266,658
Payload (Bombs)		(lb)	10,000	8600	43,000	None
Payload (Chaff) Flares		(lb)	1000/168	1000/168	1000/168	None
Wing loading		(lb/sq ft)	112.5	112.5	112.5	112.5
Stall speed (power off)	⑧	(kn)	147	147	147	147
Take-off ground run at SL	①	(ft)	8000	8000	8000	8000
Take-off to clear 50 ft	①	(ft)	10,300	10,300	10,300	10,300
Rate of climb at SL	③	(fpm)	2225	2225	2225	2225
Rate of climb at SL (one engine out)	②	(fpm)	2440	2440	2440	2440
Time: SL to 20,000 ft	③	(min)	10.8	10.8	10.8	10.8
Time: SL to 30,000 ft	③	(min)	18.0	18.0	18.0	18.0
Service ceiling (100 fpm)	③	(ft)	37,550	37,550	37,550	37,550
Service ceiling (one engine out)	②	(ft)	37,050	37,050	37,050	37,050
COMBAT RANGE	④	(n.mi.)	—	—	—	6410
COMBAT RADIUS	④	(n.mi.)	3027	3065	2655	—
Average cruise speed		(kn)	453	453	453	453
Initial cruising altitude		(ft)	33,200	33,200	33,200	33,200
Target speed	③	(kn)	483	483	483	—
Target altitude		(ft)	44,000	44,000	43,000	—
Final cruising altitude		(ft)	49,500	49,400	49,700	49,900
Total mission time		(hr)	13.45	13.59	11.77	14.17
COMBAT WEIGHT		(lb)	292,460	292,850	277,950	199,913
Combat altitude		(ft)	44,000	44,000	43,000	49,900
Combat speed	②	(kn)	496	496	506	504
Combat climb	②	(fpm)	750	750	1200	1210
Combat ceiling (500 fpm)	②	(ft)	45,800	45,750	47,000	53,100
Service ceiling (100 fpm)	③	(ft)	46,200	46,125	47,500	53,600
Service ceiling (one engine out)	③	(ft)	45,000	44,975	46,000	52,000
Max rate of climb at SL	②	(fpm)	5125	5125	5380	7560
Max speed at optimum alt	②	(kn)	551/20,200	551/20,200	551/20,200	551/20,500
Basic speed at 35,000 ft	②	(kn/ft)	520	520	522	525
LANDING WEIGHT		(lb)	199,718	199,789	197,092	199,913
Ground roll at SL	⑨	(ft)	3175	3190	3170	3190
Ground roll (auxiliary brake)	⑥	(ft)	2880	2890	2875	2890
Total from 50 ft	⑨	(ft)	5400	5405	5390	5405
Total from 50 ft (auxiliary brake)	⑥	(ft)	4600	4610	4590	4610

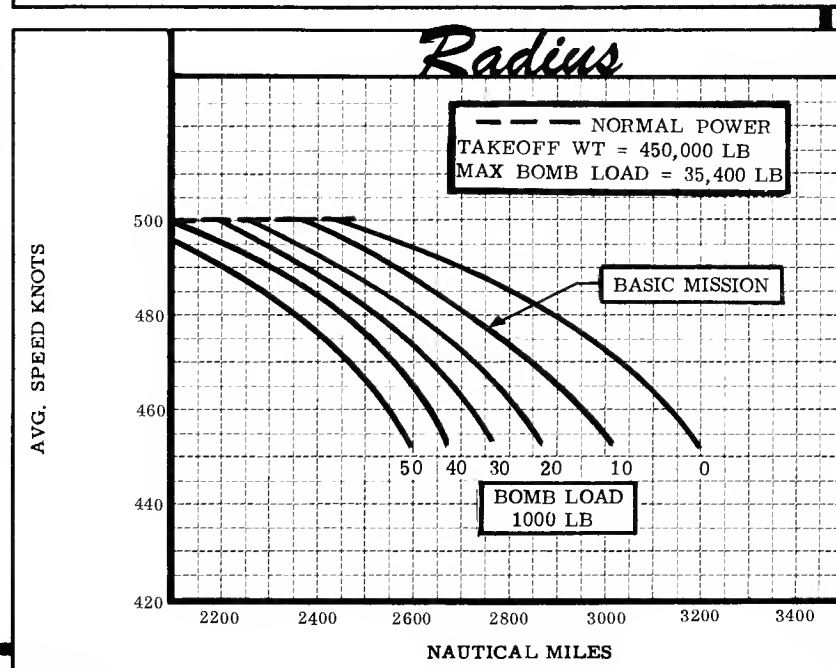
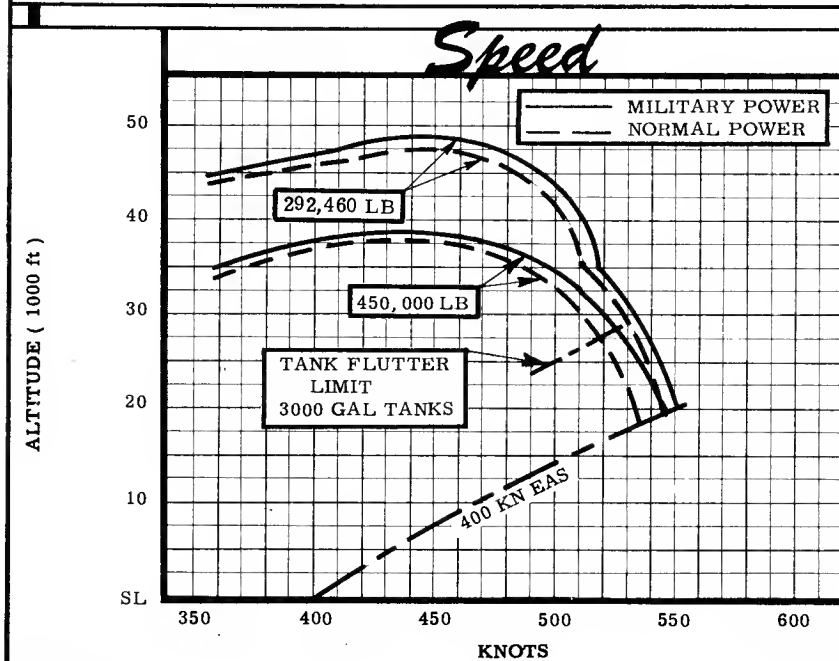
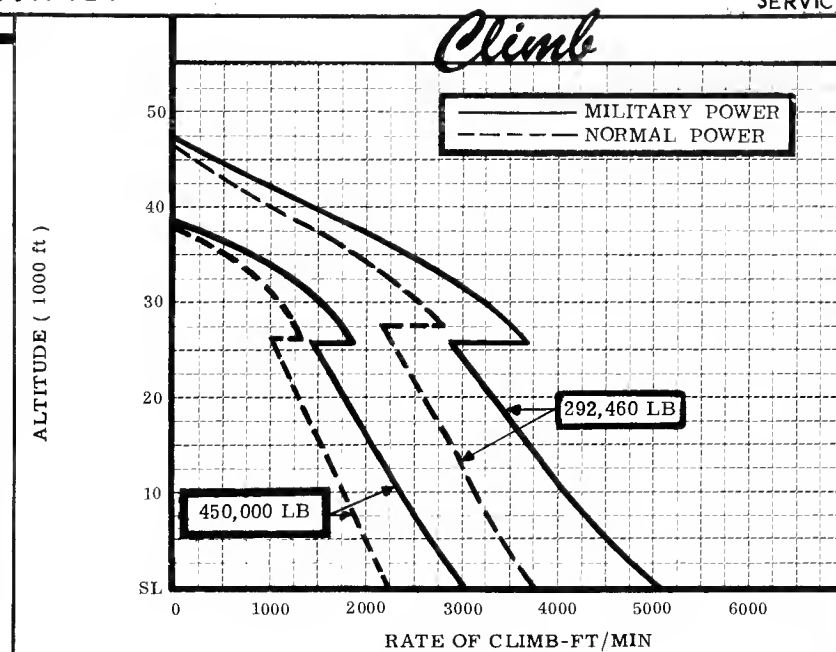
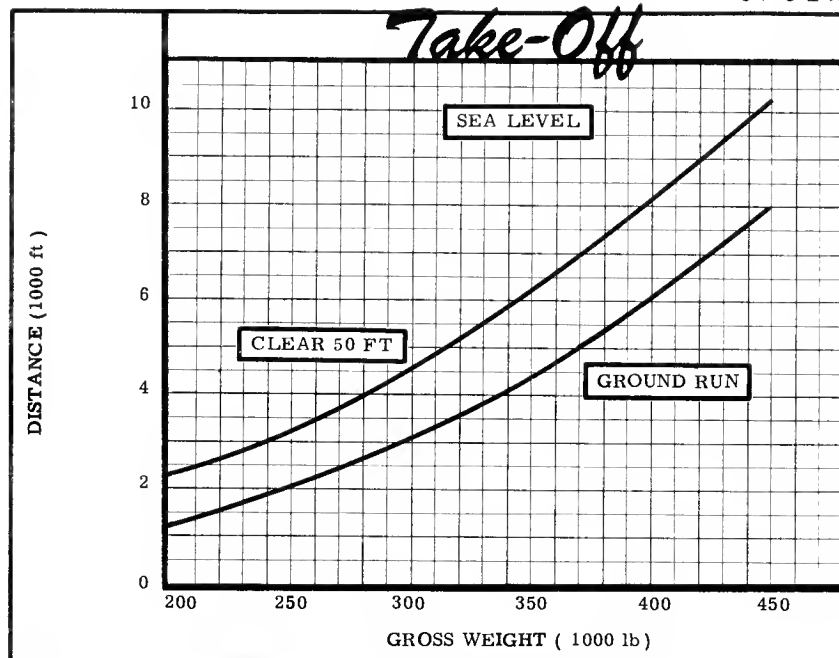
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S

- ① Take-off power  
② Military power  
③ Normal power  
④ Detailed descriptions of RADIUS and RANGE missions given on page 6.

- ⑤ Limited by structure  
⑥ With drag chute  
⑦ Excludes 2500 lb water  
⑧ Initial buffet, flaps down S. L.  
⑨ Braking force limited to 40,000 lb

## PERFORMANCE BASIS:

- (a) Data source: Flight Test  
(b) Performance is based on powers shown on page 3.



# NOTES

## FORMULA: RADIUS MISSIONS I, II & III

Take-off and climb on course to optimum cruise altitude at normal power. Cruise out at long range speed, increasing altitude with decreasing weight; external tanks are dropped when empty. Climb so as to reach cruise ceiling 15 minutes from target. Run in to target at normal power, drop bombs, conduct 2 minutes evasive action and 8 minutes escape at normal power. Cruise back to base at long range speed and optimum altitudes; as an alternate, a 45,000 foot ceiling may be maintained on the return leg with no radius penalty. Range-free allowances are fuel for 5 minutes at normal power for take-off, fuel for 2 minutes at normal power for evasive action, and fuel for 30 minutes maximum endurance at sea level plus 5% of the initial fuel load for landing reserve.

## FORMULA: RANGE MISSION IV

Take-off and climb on course to optimum cruise altitude at normal power. Cruise out at long range speed, increasing altitude with decreasing weight; external tanks are dropped when empty. Land at remote base with only reserve fuel remaining. Range-free allowances are fuel for 5 minutes at normal power for take-off, and fuel for 30 minutes maximum endurance at sea level plus 5% of the initial fuel load for landing reserve.

## GENERAL DATA:

(a) The landing reserve for the Basic Mission is equivalent to 809 nautical miles range at optimum speed and altitude.

(b) The following electronic equipment is supplemental to that shown under "Electronics" on page 3:

Glide Path Receiver . . . (1) AN/ARN-18 or AN/ARN-31  
Marker Beacon . . . . . (1) AN/ARN-32

## "Electronics" cont'd

Early Warning . . . . .	(1) AN/APS-54
Chaff Dispenser . . . . .	(1) AN/ALE-1 or AN/ALE-27
UHF Dir. Finder . . . . .	AN/ARA-25
TACAN . . . . .	AN/ARN-21
RACON . . . . .	AN/APN-69
Doppler Radar . . . . .	AN/APN89A
Auto Astro Compass . . . . .	MD-1
True Heading Group . . . . .	N1-AJA-1
Rec'v'r System . . . . .	AN/APR-14
Flare Ejector . . . . .	AN/ALE-20
ECM Trans . . . (2) . . . . .	AN/ALR-18
ECM Trans . . . (4) . . . . .	AN/ALT-13
ECM Trans . . . (1) . . . . .	AN/ALT-16
ECM Trans . . . (3) . . . . .	AN/ALT-15
Radar Altimeter . . . . .	AN/APN-150

(c) O. W. E. increases approximately 2000 lbs on B-52 airplanes utilizing the J57-P-29WA engines resulting in a range decrease for a given T. O. Weight.

## PERFORMANCE REFERENCE:

Boeing document D-15134B, "Substantiation Data Report - Models B-52B (J57-P-19W engines), B-52C and B-52D Standard Aircraft Characteristics Charts", dated 14 May 1957.

## REVISION BASIS:

To reflect current characteristic and performance data. Data re-coordinated by OCAMA.

(June 68)

MUNITIONS			
TYPE	NR. LOADED	RACK CONFIGURATION	CLASS/ACTUAL WEIGHT (LBS)
CLUSTER RACKS			
M35 Cluster	27		750/690
M36 Cluster	27		750/900
M59 Semi-Armor-Piercing	27		1,000/1,140
M65 GP - Box Fin	15		1,000/1,104
M65 GP - Conical Fin	15		1,000/1,205
MK82 GP	27		500/531
M117 (4)	27		750/823
M120A1 Photoflash	-		150/168
M124 Practice	27		250/264
M129/M129E1 Leaflet	27		750 1
MK36 Mine (3)	18		1,000/1,110
MK50 Mine (unfined) (2) (3)	27		500/544
MK52 Mine (2) (3)	18		1,000/1,190
MK53 Mine (3)	27		500/378
SUU-24/A DISPENSER			
ADU-253 Cluster Bomb Adapter	72	1 SUU-24/A	136
ADU-253 Cluster Bomb Adapter	144	2 SUU-24/A	136
ADU-256 Cluster Bomb Adapter	72	1 SUU-24/A	168
ADU-256 Cluster Bomb Adapter	144	2 SUU-24/A	168
ADU-272 Cluster Bomb Adapter	72	1 SUU-24/A	185
ADU-272 Cluster Bomb Adapter	144	2 SUU-24/A	185
BLU-29/B Fire	48	1 SUU-24/A	165
BLU-29/B Fire	96	2 SUU-24/A	165
CLIP-IN (TWO)			
MK84 GP Bomb	8	All Stations	2,000/1,970
MK25 Mine	8	All Stations	2,000/2,013
MK39 Mine	8	All Stations	2,000/2,025
MK55 Mine	8	All Stations	2,000/2,120
MK56 Mine	4	Lower Stations	2,000/2,055

- (1) Weights will depend on filler used.  
 (2) Low altitude only (400 - 3,000 feet above surface).  
 (3) Rapid release not authorized.  
 (4) M131 or MAU-103A/B fin.

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